THE Soybean Digest

Official Publication

OF

THE AMERICAN SOYBEAN ASSOCIATION

VOLUME 3 • NUMBER 7 MAY • 1943

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THE Soybean Digest

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THE AMERICAN SOYBEAN ASSOCIATION

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WHAT ARE THE FACTS?

AT the time of last September's unseasonal freezes the discounts for frost damaged soybeans then applying under federal grading standards were very excessive compared with the actual deterioration in quality. Within a few weeks after the freeze Commodity Credit Corporation lowered the discount from 2 cents for each percentage of green beans above 8 to ½ cent for each 1 percent.

As more information concerning the effect of the freezes became available, it was to be expected that further adjustments in the government's grading standards might be made to conform with the actual worth of the off-colored beans in the production of oil and meal. It has been suggested by informed men that more attention might be paid to utilitarian value and less to certain niceties, such as color.

Since then, the fact has been well established that the green beans average just as high in oil content as those with the normal yellow color. Testimony on the effect on quality of oil and meal is not so clear, but no definite statement that the quality is actually harmed by frost has come to our attention.

Yet we are told that no change in the federal grading standards is contemplated. Why? One reason given is that there are too many other things to do! But what could be more important than that growers be assured a fair return from their beans?

Growers who marketed their beans soon after harvest last fall and took the heavy discount rate then in effect were given to understand an adjustment would be made in line with the change in discounts. To date, we have not heard of a single grower who has received such an adjustment. Actually, producers who harvested and sold their beans early received far less for them than many who left their crop in the field all winter! Just how long are growers to wait for this adjustment?

We do not claim to have the facts necessary to form a conclusion concerning the changes that should be made in the grading standards. But the matter should not be dropped until all the facts are brought out. Nor should the possibility of revised standards be pushed aside as relatively unimportant. Not if we are to expect corn-belt farmers to continue to grow soybeans.

POSTWAR SOYBEAN PICTURE

WHAT conditions may we expect after the war? Two chickens in every pot and a quart of milk for every Hottentot? Or a wild inflationary spiral ending up with a crash that will make 1929-33 look like prosperity?

Of course the soybean industry's future is irretrievably bound up with the world picture as a whole. Will we be faced with ruinous surpluses and forced into a new government program of reduced acreage? Will tropical oils be allowed to come in to compete with soybeans? Or will pentup demands occasioned by the war call for a further expansion?

An attempt to outline possible adjustments that may be necessary is made in a leaflet recently issued by the agricultural department committee of the U. S. Chamber of Commerce. This leaflet suggests three possible alternatives. They are:

1. A return to the 1937-41 level of production in the United States, which the committee accepts as approximately normal. This will mean a 10 million cut in oilseed acres, including soybeans, or eliminating approximately 6 out of every 10 acres now growing the crop.

2. With consumption returning to 1937-41 levels, placing our economy on a near self-sufficient basis, holding both exports and imports to a minimum. This would actually require an increased acreage in oilseed crops of over 50 percent above the 1942 figure.

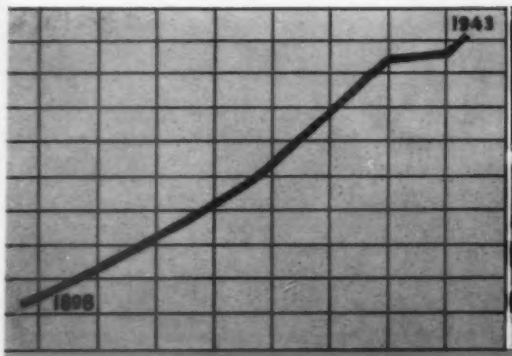
3. Consumption remaining at present levels, due to full employment and high consumer income. An expanded demand would result in still further increase in acreages, particularly oilseed crops.

There are several questions to answer before we can tell with any degree of assurance which one of these alternatives, if any, is apt to be correct. For instance, our present relationship with Central and South America seems to indicate a continuing large volume of trade with the countries to the south of us. Among crops produced cheaply and in great volume in the countries near the equator are the oilseeds. Is our government now encouraging export of these to the United States on the assumption that such trade will tend to be permanent and compete with soybeans for the domestic markets when the war is over?

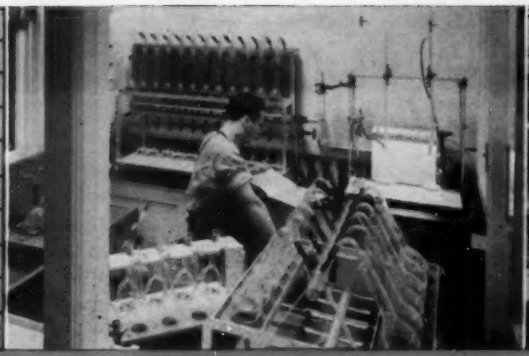
Outlines of the possible postwar setup are still vague and confusing. But it is not too early for soybeaners to begin to ask questions. And also to do the thinking so necessary to postwar planning.

Unfavorable weather has delayed spring work in much of the soybean belt and planting in some sections will be late. But in the rush to get soybean seed in the ground any neglect of such important measures as seed testing, proper inoculation or thorough preparation of the seedbed is bound to be reflected in lower yield next fall.

6 Reasons why NITRAGIN is the most widely used inoculant



NITRAGIN SALES CLIMB EVERY YEAR NITRAGIN was the first commercial inoculant in the world. Since 1898, NITRAGIN has been the leader in sales, establishing new, high records each year.



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CONTAINS ONLY SELECTED TESTED GUME BACTERIA The nitrogen-fixing the legume bacteria in NITRAGIN is determ inoculating and testing plants in the Nitragin Co own greenhouse.

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SCIENTIFIC PACKAGING NITRAGIN'S container maintains the quality of the inoculant; tests show bacterial growth continues in the moist humus and the number of bacteria is actually increased after packing.

SOYBEAN RESEARCH Results of soybean oculation research, farm tests, and experiment findings are published in folders prepared by Lewis Erdman, Nitragin bacteriologist. Write for

Legume inoculation must be purchased on faith. You can't see inoculating bacteria without a microscope and there is no way to compare the effectiveness of different brands before you buy. That's why your best guarantee of quality in an inoculant is its past performance and the reputation of its maker.

NITRAGIN is the oldest, most widely used inoculant for soybeans and other legumes. Farmers have had FAITH in NITRAGIN for over 40 years. To build and improve the effectiveness of NITRAGIN, scientists carry on an extensive program of research and testing to find better strains of nitrogen-fixing bacteria and to improve the product in other ways. It will pay you to keep these facts in mind when you buy inoculation.

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ANNOUNCE 1943 YIELD CONTESTS

THE 1943 Soybean Yield Contests have been announced by the Illinois Crop Improvement Association, the Indiana Corn Growers Association and the Iowa Corn and Small Grain Growers Association for their respective states.

In Illinois the contest will be on 10 acres, in Iowa and Indiana 5 acres, as in the past.

Inaugurated several years ago to provide incentives for the best soybean growing practices and to demonstrate the most efficient methods of soybean production, contests have become increasingly popular and successful.

Substantial inducements are being offered to entrants, as in the past. The Iowa awards total $145 in cash for the first 10 place winners. The John Sand trophy is being awarded to the state winner for the second time this year. In addition there will be prizes for winners of local contests.

Indiana state winner receives the Roy Caldwell trophy. Medals are being awarded, but the basis of award has been changed from one per county to awards based on yield this year, the soybean committee has announced. In 1943 growers producing yields as follows will be entitled to medals for their respective yields:

30-35 bushels per acre
35-40 bushels per acre
40-45 bushels per acre
45 and up bushels per acre

County winners will receive medals only in case their yields are 30 bushels per acre or more.

Appropriate useful prizes are also being awarded to Illinois contest winners.

Those interested in entering a soybean yield contest should write:

Illinois

Illinois Crop Improvement Association
Urbana-Lincoln Hotel
Urbana, Ill.

Iowa

Joe L. Robinson, Secretary
Iowa Corn and Small Grain Growers Association
Ames, Iowa

Indiana

Prof. K. E. Beeson, Extension Agronomist
Purdue University
Lafayette, Ind.

Deadlines for entries to the various contests are June 1 for Illinois and July 1 for Iowa. In Indiana a contestant must be a member of the Indiana Corn Growers' Association with dues paid by June 15, 1943.

—s b d—

SOYA PRODUCTION CAPACITY INCREASING

Production capacity for edible soya products — the high protein foods soon to have an important place in both military and civilian diets — is expected to reach 1½ billion pounds annually by December if the expansion program continues at its present rate, the War Food Administration reports.

While a large part of this production will be needed for direct war requirements, the quantity available for civilians will be many times as large as it has been in the past year.

Launched by the Department of Agriculture last December, the expansion program is expected to supply adequate quantities of soya products — chiefly flour, grits, and flakes — to meet all requirements, including the anticipated heavy post-war needs. Expansion in 1943 is going ahead at a faster rate than we thought possible several months ago, and production capacity on an annual basis should pass the billion-pound mark by midsummer.

Special committees in the Department are now developing a program for the utilization of soya products — both in kitchen recipes and in prepared foodstuffs — so as to take full advantage of this important protein food in the American diet.

Soya products already have played a significant wartime role. Rich in valuable protein, minerals and vitamins, they are readily adaptable to large scale use as a human food to supplement meat, milk and eggs. With present production at about a half-billion pounds, most of the output has been needed to meet expanded war requirements. Large quantities have been used in the military diets of the Allies for fortifying cereal foods, meats, and other products.

Most of the soya products used domestically have been utilized by food manufacturers for fortifying or extending various cereal and meat products. Increasing amounts will be available for this purpose as well as for direct use in the home.

FOOD FOR VICTORY

Eight million American fighting men are depending upon us for food.

Thirty-five million families working to win at home must be fed.

And our Allies, busy with battle, need all we can add to their food supplies.

So the world is looking to the American farmer.

And to the railroads as well. For this food must be taken where it is needed – must be moved swiftly and constantly to city and seaport.

And along with it, planes, guns, tanks and other war goods to back up American courage on every front.

It adds up to the fabulous total of a million and a third tons moved a mile every minute, day and night.

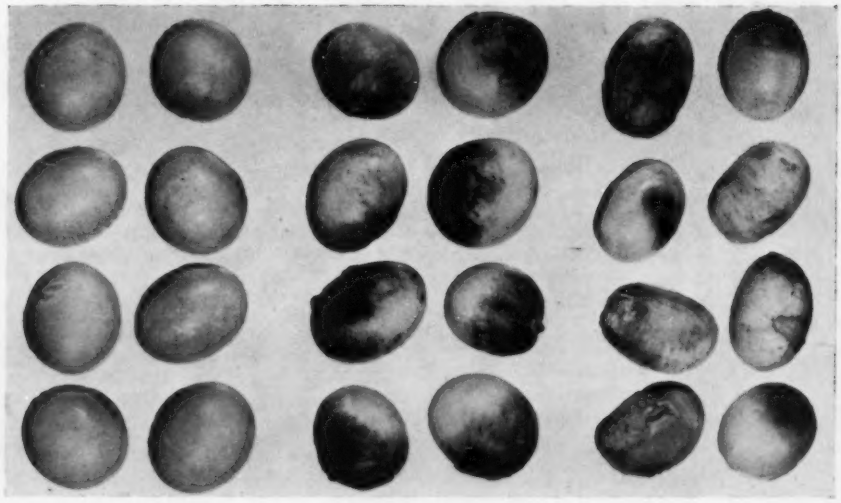
To move it, a heavily loaded freight train gets started on its run every four seconds.

It means that 1942 freight movement exceeded that of 1941 by 34% – with very little new or additional equipment.

This was made possible because railroad men – in the offices, in the shops, in the yards, and on the road – have been working to get the most service out of railroad plant, power and equipment – realizing that, while this victory will be won first and above all by fighting men and fighting equipment, these must be backed up by transportation that's doing a fighting job.

Association of AMERICAN RAILROADS *Washington D. C.*

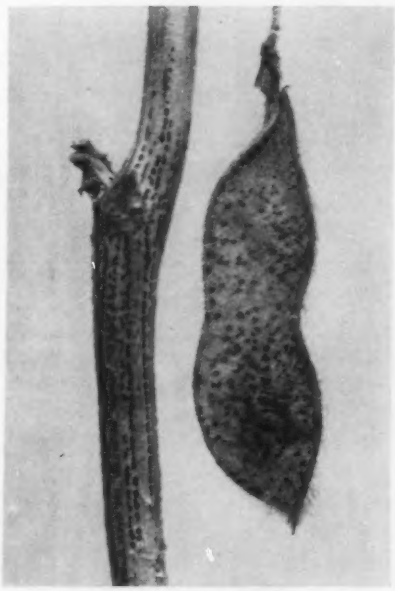
W. B. ALLINGTON



A B C

Soybean seed of three kinds varying widely with regard to disease infection. A. Healthy seeds germinating nearly 100 per cent. B. Seed infected with Cercospora, purple blotches, that do not reduce germination very much but injure the appearance and may propagate the disease over winter. C. Seed injured by miscellaneous fungi after going into storage too damp. This condition injures germination, but seed treatment is fairly sure to improve stand.

Below, pod and stem blight. Bottom, charcoal rot as it appears on the stem and roots of a soybean plant. Both enlarged.



START STUDY of BEAN DISEASES

TO provide more information about resistance or susceptibility of certain varieties of soybeans to diseases that cut into the production of this vital wartime crop, a threefold study has been started in 13 north central states, according to Benjamin Koehler, of the department of agronomy, University of Illinois College of Agriculture.

Information so far available on these diseases is concerned primarily with causes and symptoms, while little is known about resistance or susceptibility. To learn about seed treatment for disease control, plant scientists in Ohio, Indiana, Iowa, Nebraska, Kansas, Missouri, Wisconsin, Minnesota and South Dakota are to conduct coordinated tests with Illinois.

W. B. Allington, formerly at the University of Wisconsin, has been employed by the U. S. Regional soybean laboratory as pathologist spending full time on soybeans. With headquarters at Urbana, he will work throughout the north central states as far as wartime travel will permit.

1943 Program

His program for 1943 will include (a) a survey to determine the kinds, relative prevalence and apparent destructiveness of soybean diseases over as wide an area as possible, (b) a study of variety tests in different locations to determine varietal reactions to diseases and (c) seed treatment tests. In these latter tests he will work with the subcommittee on soybean seed treatment tests appointed by the war service committee of the Upper Mississippi Valley Plant Pathologists.

Bacterial blight and bacterial pustule symptoms (often indistinguishable) and mosaic have been observed frequently and conspicuously at the Illinois Agricultural Experiment Station since 1924. In the spring of 1927 much of the soybean seed would not germinate because of pod and stem blight infection. A high percentage of the seed planted produced "Diaporthe sojae" colonies.

In 1930 Alternaria leaf spot occurred in a conspicuous manner on the Station farm, producing target-like spots up to one-half inch in diameter. Downy mildew, caused by "Peronospora manshurica," and charcoal rot, caused by "Sclerotium bataticola," also were recorded for the first time in 1930. Frogeye leaf spot (Cercospora diazu) and anthracnose (Glomerella glycines) were noticed for the first time a few years later.

Purple spotting (see picture) of soybean seed, caused by a Cercospora species, has been conspicuous in Illinois and elsewhere when fall weather has been damp. While this discoloration does not seem to injure the germination, it has at times seriously injured the market value of edible types.

Came From Asia

Just when these diseases first actually appeared in Illinois, no one knows. Some of them possibly were introduced with the first seed brought here. A number of them unquestionably were first introduced into this country with seed brought from Asia.

Various papers by S. G. Lehman, of North Carolina, and reports in the *Plant Disease Reporter* from as far west as Iowa and Oklahoma indicate that these diseases are now widespread. Pythium and Rhizoctonia root rot, damping off and a "bud blight" of unknown cause were reported by G. C. Kent and I. E. Melhus to be destructive in Iowa in 1942.

Some regional limitations to these soybean diseases have been observed. For instance, southern blight (Sclerotium rolfsii) and Phymatotrichum root rot occur particularly in the South. Charcoal rot and frogeye have been observed in Illinois — primarily in the southern half — and reports indicate that frogeye becomes worse farther south.

Although, as stated above, little informa-

(Continued on page 18)

The Use of Soy Milk in *Allergy Diets*

● *Parents with infants who are allergic to cows' milk have a most difficult problem to solve. One answer is a special soybean milk. Dr. Muller, now director of allergy research of the Borden Company, originally developed Mull-Soy for his own child, then promoted it by his personal efforts.*

DR. MULLER

By JULIUS F. MULLER, Ph.D.

IN THE present food crisis nutrition experts are concentrating on development of soybean food products to replace war shortages of essential meat and milk proteins. New soybean products and new household recipes for soybean foods are becoming suddenly popular. Although this widespread popularity is new to the soybean, it is not unexpected, for scientific recognition of its unique nutritional values dates back many years.

For example, seven years ago, a successful soybean milk-substitute was developed by the writer and marketed under the trade name *Mull-Soy*. The original idea behind this product came as a "flash," such as often comes to a research worker while engaged on an unrelated problem. The urge to develop a milk-substitute was his desire to supply the nutritional advantages of milk to his own child who was highly allergic to milk and required something to replace it in his diet.

Two Percent Allergic

Most people are surprised to learn that two percent of all babies are estimated to be allergic to cows' milk and show some unfavorable reaction when they take this usually nearly perfect food. Many older children and adults are also sensitive to milk and must avoid it. Allergy is a condition in which some part of the body reacts in an out-of-the-ordinary way to a food, inhalant, or contact material. During the first year of life milk allergy most commonly appears as eczema, but in many cases old fashioned "colic" in babies is now diagnosed as a digestive symptom of milk allergy. Other symptoms appearing more frequently in older children and adults are nausea, hives, migraine headaches, and asthma.

Proteins are the usual food factor causing allergy. Although certain patients may be desensitized by proper medical treatment, and some outgrow their allergy or become naturally immunized, the usual treatment for milk allergy is complete avoidance of milk in the diet. It is readily apparent what a problem this becomes for the mother of a young, allergic infant, but a satisfactory solution is found in the use of a properly prepared soybean milk-substitute. The soybean is probably the best source of non-animal protein, and soybean oil is easily digested and bland in flavor. To be satisfactory as a milk-substitute, however, careful processing is necessary as well as addition of extra amounts of carbohydrate and minerals.

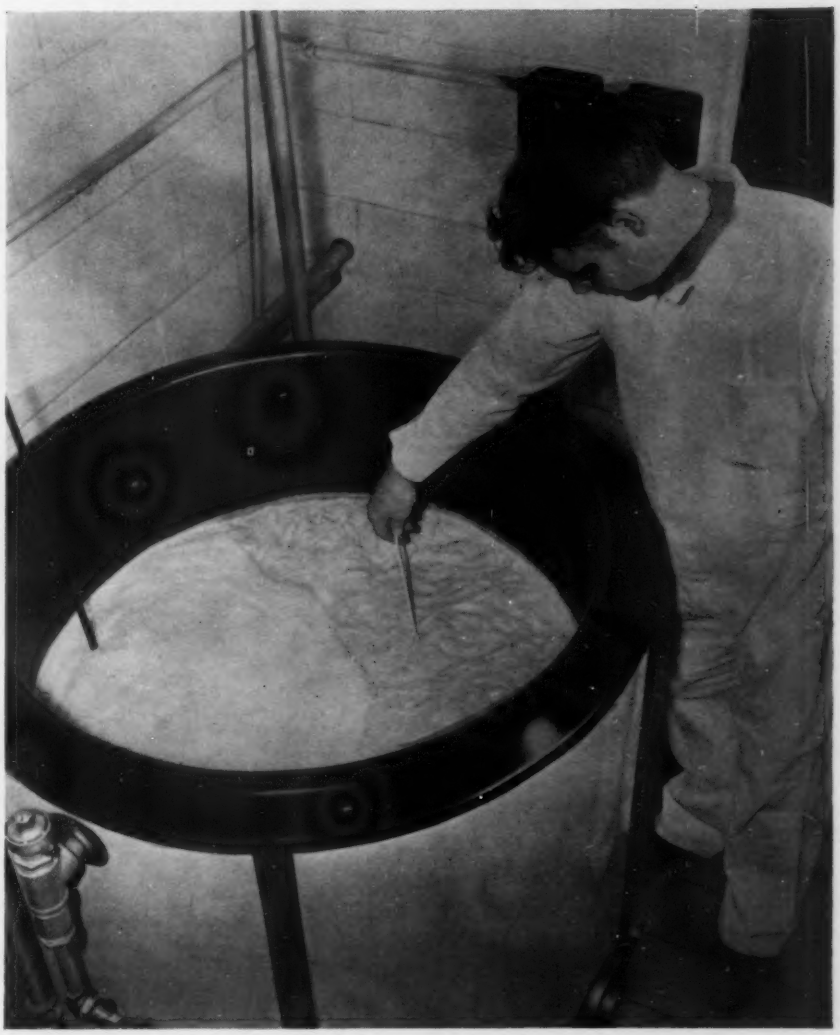
Used in Orient

Soybean "milk" has been used for many centuries in the Orient but such a product was found to be unsuitable as a milk substitute for infant feeding in this country. A scientifically balanced formula and carefully controlled method of manufacture were required. The detailed development of the formula and manufacturing process required more than two years of study and experimentation. When the finished product finally emerged from the laboratory stage, it had to go through extensive clinical investigation in leading hospitals in various parts of the country, to prove its worth. The objective, of course, was to produce a food having approximately the same chemical composition as cows' milk with the same nutritive value. Other important considerations which made the development of the formula more difficult were taste-appeal and stability of the emulsion. To supply the constantly increasing demand for *Mull-Soy* since its introduction early in 1936, new and faster productive methods have had to be devised. Clinical research on its nutritive value has been continued.

Mull-Soy is now being manufactured by a large scale continuous batch system in a wing of the fine modern factory of the National Milk Sugar Division of The Borden Company in Bainbridge, New York, in the heart of a rich farming region. The process

(Continued on page 16)

Part of a batch of Mull-Soy in the first stage of manufacture. Rapid mixing and temperature control are important factors in producing the proper consistency and taste of the finished Mull-soy.



Planting Time

CHESTER C. DAVIS: This is the most important planting season in American farm history. Farmers face the fact that this country and our allies need the biggest farm production ever turned out. Farmers are doing the spring planting in the American spirit of "Damn the torpedoes; go ahead." They are taking a patriotic chance for America; they are seeding the acreage.

— USDA Photos by Forsythe

Left above, Fred Hannel, Carroll County, Ind., farmer cleans and bags soybean seed ready for planting. Hannell grew 83 acres of beans in 1942. Below, soybean seed goes into corn planter box on farm of J. Frank Judge, Boone County, Iowa.

★ GROWERS ★

MANDARINS IN MICHIGAN

The first crop of soybeans to be certified for seed in Michigan were Mandarins grown in 1942 on the Dr. S. T. Busey farm near Deerfield, Mich, reports A. A. Johnson, secretary of the Michigan Crop Improvement Association.

Dr. Busey purchased the Mandarin seed from the Canadian government at Ottawa and planted it on 23 acres. The yield was 39.73 bushels to the acre. The beans were planted May 22 in rows and were harvested with a combine September 25 in time to get the ground fitted for fall wheat.

Concerning the Mandarin variety, Professor Johnson states: "We recommend the Mandarin particularly for certain sections of Michigan, because of its early maturity, its high yield of grain and high oil content. On heavy soils in southeastern Michigan Mandarin soybeans can be planted about the middle to the 20th of May, straight combined four months later in time for fall seeding of wheat. Because of its early maturity we are also recommending it on fertile soils throughout central and southern Michigan."

The Busey farm is operated by Norman Bucholtz. By a judicious use of fertilizer and crop rotation he has built a rundown soil up to a high state of fertility. No stock is kept on the farm but plenty of potash and phosphorus, but no nitrogen, are used.

The rotation plan used is soybeans, then wheat with clover sown in the spring, and corn the next year. No clover is harvested for hay but is plowed under as a soil builder.

IOWA GROWER EXPERIMENTS

Ben Schneider of Crawford County, Iowa, has proved to his own satisfaction that inoculated soybeans give the greatest production for him, reports the *Des Moines Register.*

Last year he decided to check the value of inoculation himself. He started out under conditions which should show results the best — using a field of yellow Marshall silt loam, deficient in nitrogen and humus. He made one round with the drill, using uninoculated seed, then followed with inoculated seed for the rest of the field.

As Crawford County Extension Director Paul A. Johnson puts it, "You could see the difference two miles away when the crop came up."

The inoculated beans averaged 50 inches high, 54 pods per stalk, were dark green in color and gave an estimated yield of 30 bushels per acre. In contrast, the uninoculated beans averaged only 24 inches high, only 24 pods to the stalk, were yellow, sickly, weedy plants and gave a yield of only 8 bushels per acre.

Although better varieties and improved methods of culture are partly responsible for the average 100 per cent increase since 1920 in Illinois soybean yield, the wide use of inoculation has contributed greatly to the larger crops, says O. H. Sears, professor of soil biology, University of Illinois College of Agriculture.

BEANS FOR FORAGE

The planting of soybeans for hay as a source of needed protein where clover and alfalfa are short is recommended by T. E. Woodward, Bureau of Dairy Industry of the Department of Agriculture.

Woodward says no dairy farmer can afford to jeopardize his business by depending on the purchase of such an uncertain commodity as high-protein feed this year. The wise farmer will raise his own supply if it is at all possible to do so.

The easiest and most practicable way for a dairy farmer to provide the protein he needs is by raising legume forage, states Woodward. If he has plenty of legume hay or legume silage he won't need to buy any ready-mixed feed or high-protein feed to supplement his farm grains for dairy cows.

If it happens that a half crop of alfalfa this year will not provide all the hay that is needed, other crops can be grown instead of alfalfa. Soybean hay, for example, is fully as high in protein as alfalfa and if the crop is cut early, before the stems become too large, the hay will be eaten with little waste. Soybean hay dries slowly and is liable to be damaged by the weather. Cutting early, while the weather is warmer, makes curing easier.

Farmers who plan to raise soybeans for dairy feed are urged to select one of the so-called forage-producing varieties, since these varieties will provide as much protein without interfering with the seed supply for oil-producing farmers. Department forage crop specialists suggest the Wilson and Virginia varieties for the central regions, the Laredo and Otootan for the South, and the Cayuga for the North. These may be seeded at normal seeding date.

Farmers who raise soybeans would have a choice of making hay or harvesting the beans for use as part of the concentrate ration, depending on their facilities for harvesting hay and beans.

In Iowa, where winterkill of hay and pasture land was extensive, the state war board is urging that at least part of this acreage be planted to emergency hay crops.

"Soybeans, harvested for hay, will provide a good substitute for the legume seedings which have been lost," says A. A. Loveland, state war board chairman. "The shift to soybean hay can be made on land which is not subject to severe erosion."

AS AN ACE IN THE HOLE

Iowa State College economists are recommending that farmers grow a few extra acres of soybeans this year as a reserve supply of protein feed for home needs. This is part of a college sponsored program to help farmers get on a practically self-sustaining basis as far as balancing feed supplies and livestock numbers is concerned.

This acreage would be in addition to war production goals for soybeans.

According to I. W. Arthur, extension agricultural economist, a rough rule in Iowa would be 1 acre of beans for every 10 acres of corn to be fed. If a farmer can buy half the protein he wants, then he should plant ½ acre of beans for every acre of corn to be fed to cattle and hogs over 80 pounds in weight.

Farmers should feed soybeans now where it is practical, utilize alfalfa to the fullest extent where it is available, and if possible seed more alfalfa for another year.

The SOYBEAN HAS GROWING PAINS

LAMAR KISHLAR

By LAMAR KISHLAR

• What states will produce the large soybean crops in the future? Lamar Kishlar, chairman of the Soybean Nutritional Research Council and research director for Ralston-Purina Company, tells where yields may be expected to go up. The address was given before the recent Farm Chemurgic Meeting at Omaha.

DURING the emergency, it will become more and more difficult to provide well balanced rations for livestock. Dried milk by-products are needed for defense. Packing house by-products will be curtailed. Only a fraction of the needed fish meal will be available. Molasses, already cut off from the Philippines, is needed to make alcohol, and boats are not available to bring in larger supplies from Cuba. The burden in helping to balance the diet of the largest numbers of livestock and poultry in history is now more dependent than ever on oilmeals.

Potential Consumption

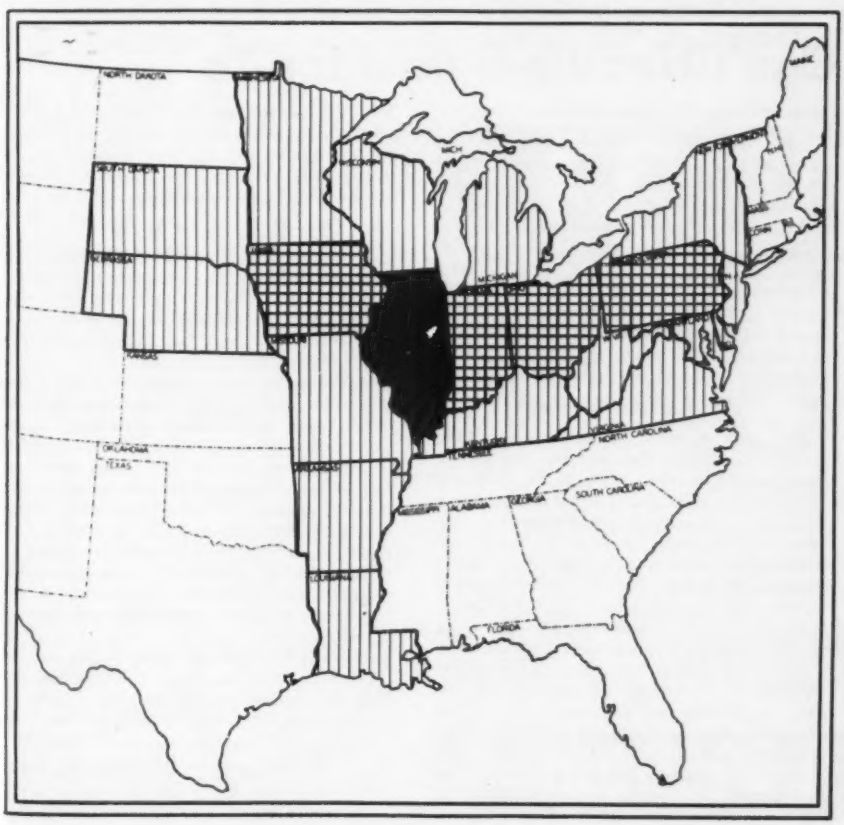
If all the feeders would follow a sound program of feeding, and the 244 million head of livestock and 547 million poultry should be fed a good concentrate containing a reasonable quantity of oilmeals, the consumption of oilmeals alone in the United States would be over 12½ million tons. This is more than twice the quantity of oilmeal which we will produce. It also disregards the added fact that even more oilmeals could be used to replace the milk, meat scrap, tankage and fish meal which will be even more limited in quantity than oilmeals.

The farmers of America have indicated an intention to plant 12,143,000 acres of soybeans in 1943. The announcement by Mr. Chester Davis on April 8 that the government will guarantee farmers $1.80 per bushel for new crop yellow soybeans, having not over 14 per cent moisture, may increase this acreage. With favorable weather and an encouraging manpower situation, it might be possible to raise 230,000,000 bushels of beans this year.

The crushing capacity for oil seeds is adequate for the country as a whole, but because so much of the soybean expansion has been concentrated in four states, there would be a deficiency of capacity in the central soybean and flaxseed area to handle such a crop. Cottonseed crushing capacity in the South, however, exceeds the supply of seed available by two to one. Any surplus of soybeans grown in the soybean belt can be crushed on surplus cottonseed crushing equipment.

One-third of all the soybeans grown in the United States last year were grown in Illinois. Three-quarters of all acreage harvested for beans was located in the four states of Illinois, Iowa, Indiana, and Ohio. The reason that the soybean is concentrated in these states is not entirely because these states pioneered in the growing of this crop nor that the farmers of this area are more experienced in its cultivation. Part of the cause of the phenomenal growth of the soybean in this section is due to the soil and the climate.

Black area has potential yield of soybean oilmeal of over 1,000 lbs. per acre; cross lined 800 to 1,000 lbs.; single line 600 to 800 lbs.; white under 600 lbs.



Possible Yield

The map shows the potential yield of soybean oilmeal per acre for the more productive soybean area of the United States. Illinois alone has a potential yield of over 1,000 pounds of soybean oilmeal per acre. This figure is based on the average yield of soybeans per acre as reported by the U. S. Department of Agriculture. Iowa, Indiana, Ohio, and Pennsylvania have a potential yield of from 800 to 1,000 pounds of soybean oilmeal per acre. These are shown cross hatched on the map. The states marked with single hatched lines on the map are capable of producing on an average 600 to 800 pounds of soybean oilmeal per acre. The states which are now white have a potential yield of less than 600 pounds of soybean oilmeal per acre.

As new varieties of soybeans are developed which yield better on southern soil in southern climate and as the farmers in the states where soybean culture is still new become more experienced, the states now located in low yielding areas may advance to the next higher yielding area. It is probable that Iowa, Indiana, and Ohio soon will be producing over 1,000 pounds of soybean oilmeal per acre along with Illinois. Wisconsin, Michigan, Minnesota, New York, and Pennsylvania indicate possibilities for advancing into the next higher yield group.

Crushing Capacity

Under the demands of war our country could very easily crush and consume twice the quantity of oil and oilmeals now produced. Even if in 1943, double the 1942 crop should be produced, America has the capacity to crush it and consume the products, although the efficiency with which the conversion is made would suffer because the areas best suited to produce the beans and the location of the available crushing capacity are widely separated geographically.

Soybean crushing becomes 21 years old this year. From a modest beginning of only a few thousand bushels in 1922, this industry has grown, until for the crop year 1942-43, 3-1/3 million tons of meal will be pro-

(Continued on page 16)

Soy Oil Replaces Tung

IN INDUSTRIAL USES

• What markets will we find for soybean oil after the war? J. E. Good, vice president of the Woburn Degreasing Company at Harrison, N. J., supplies one of the answers.

Courtesy Chemurgic Digest

J. E. GOOD

By J. E. GOOD

AS the result of certain research work the Woburn Degreasing Company about ten years ago was able to offer a very high grade distilled fatty acid made from soybean oil for use in the manufacture of synthetic resins. Other similar fatty acids were offered about the same time and these high grade fatty acids had a great deal to do with the development and growth of the synthetic resin industry. Soybean oil contributed a great deal to this development. Our business in this item grew each year so that last year we used approximately 100 tank cars of soybean oil in manufacturing these fatty acids. Other fatty acid manufacturers also got into the same line of production so that the total quantity of soybean oil for that purpose was considerably larger than 100 tank cars per year.

At the present time the use of soybean oil for this purpose is very much restricted from two principal causes. First, soybean oil is being used almost entirely for edible purposes at the present time and, second, the paint and varnish manufacturers have been unable for some time to secure the necessary chemicals to be used with the soybean oil fatty acids for making synthetic resins. However, when the war is over and these other chemicals can again be obtained we feel sure that even larger quantities of soybean oil will go into the manufacture of synthetic resins.

Oil From Abroad

Up to about the year 1937 we were obliged to depend on foreign markets for most of our soybean oils, but beginning about that time we were able to secure domestically produced soybean oil and have been continuing to use domestic oil. Furthermore, the paint and varnish industry began to use soybean oil as such in the manufacture of certain types of paint and we believe that our industry and the paint and varnish industry are responsible to a rather large degree for very much increasing the industrial use of soybean oil.

When the shortage of chinawood oil began to develop some years ago we were ready to supply the market with another conjugated double bond oil, that is, Isoline, dehydrated castor oil. After the industry learned how to use dehydrated castor oil, it was found that it could be used as a satisfactory alternate for tung oil or chinawood oil, for about 95% of the uses to which chinawood oil had previously been put. Furthermore dehydrated castor oil had certain properties of its own which chinawood oil did not have. Chinawood oil is an imported product and at the present time castor oil is also an imported product, usually in the form of beans, the beans being pressed in this country.

Shortly after we introduced Isoline to the market we found by further research that we could convert soybean oil to the conjugated double bond molecular structure as well as castor oil and linseed oil. The process of conversion of soybean oil is entirely different from the process of conversion of castor oil to the conjugated double bond molecular structure.

Conjusoy

We also find that Conjusoy, which is our trade name for the converted soybean oil, is almost a duplicate of Isoline, that is, dehydrated castor oil. Conjusoy also can be used as an alternate to chinawood oil for approximately 95% of the uses to which tung oil has previously been put and like Isoline it has qualities which tung oil does not have. The films from tung oil can become quite brittle and therefore crack. The films made from Conjusoy are tough rather than brittle. They are also quite flexible and do not break when the surface on which they are used is bent.

Still furthermore, films made with the use of Conjusoy have great color retention and very little "after yellowing." The only two oils that we know of which have this important quality of retaining their color without "after yellowing" or change in color are Isoline and Conjusoy. We believe that because of the toughness of the film and the color retentive properties of the film made from Conjusoy, that Conjusoy will permanently replace chinawood oil for many purposes.

It is our belief that after the war is over and there again is a free flow of raw material this product made from soybean oil, Conjusoy, will be very extensively used in place of chinawood oil and that American farmers can find a ready market for much larger quantities of soybeans than is the case at the present time.

We have also developed a Conjusoy fatty acid which is so much superior to the previous fatty acid made from soybean oil that we believe it will be extensively used in the manufacture of synthetic resins and to a greater degree than distilled soybean fatty acid was previously used. This probably means that a further quantity of soybean oil will be required. We should much prefer to use products produced on our American farms instead of imported oils.

—sbd—

"E" AWARD FOR FOOD PLANTS

The Nation's food processing plants are eligible for the Army-Navy Production Award — the symbolic "E" for Excellence, the War Food Administration has announced.

Both the War and Navy Departments have authorized the Food Distribution Administration to nominate candidates to be considered for the honor by the Army and Navy Boards for Production Awards.

Can't Handle Beans for 4c

Editor *The Soybean Digest:*

With reference to the discussion that is going on relative to the 4c per bushel margin allowed by the CCC for handlers of soybeans, we do not believe they have looked at the position of the country handler in the right light. Frankly, we do not see how beans can be handled in this section for 4c a bushel. It is our desire to do everything we can to encourage the growing and marketing of this vital crop in the most economical manner possible — but there are items of expense that can not be eliminated.

Need Close Market

The farmers with the shortage of tires, gasoline, and their fast wearing out trucks must have a market close to the farm to conserve not only their equipment but their labor, which is exceedingly inadequate. We have tried to provide buyers as close to the area of production as possible, which means handling by hand. Not only is labor much scarcer but no one will deny that it is much more costly than a few years ago when we were making considerably more than 4c a bushel on beans. Last year we handled the bulk of our beans in about a month's time, which entailed overtime as we had to work day and night. Higher taxes must be taken out of this small margin. More overhead in the office is brought on by records and reports required by the government. To this is added the increased investment. When beans were under a dollar a bushel we made more than a 4c margin, now when it takes from twice to three times as much money to handle the same number of bushels, we are offered a smaller margin.

CCC Can't Do It

We do not believe the CCC can operate on 2.2% and all they have is the paper work — still they ask the handler to handle the beans for this meagre percentage. It is our contention, and we have handled a lot of soybeans, that it can not be done.

It has been proved time and time again that the independent industries operate much, much cheaper than government operations, so we feel that it behooves the CCC in view of getting the 1943 crop moved in the most economical manner, to allow the handler enough to cover his expenses, pay his taxes, and buy a bond or two; for, if the CCC endeavors to handle the crop, we venture the opinion it will cost nearer 15c a bushel than 4c which will come out of the taxpayers' pockets — and who will pay the taxes?

Hoping the CCC will see the catastrophe of cutting the handlers' mark-up so low that he will be unable to handle this important crop, before it is too late, we are,

Sincerely yours,

The Blytheville Soybean Corp.
By W. O. Reeves, Pres.
Blytheville, Ark.

Oil Committees Meet

• DISCUSS DISTRIBUTION PROBLEMS

TWO oil industry food advisory committees met recently to discuss in detail various provisions of Food Distribution Order No. 29 regulating the distribution and use of soybean, cottonseed, peanut and corn oils.

Food Distribution Administration officials asked the committees — the Edible Oil Refining committee, representing oil refiners, and the Soybean Processors committee, representing producers of crude soybean oil — to make suggestions for the effective accomplishment of the order's objectives. These objectives are:

(1) To insure supplies of raw materials to margarine, shortening and oil manufacturers so that they can produce sufficient finished products to meet civilian consumer demand; (2) to assure successful bidders on Lend Lease, Red Cross and other Food Distribution Administration purchase programs that they will be able to obtain the required fats and oils to fill their contracts; (3) to make it possible for all fats and oils manufacturers to obtain a fair share of available and desirable raw materials; and (4) to enable the Government to know at all times where surplus oil exists, so that emergency requirements for the armed services and Lend-Lease may be met.

Modify Rules

Discounts on off grades of soybean oil were discussed. The soybean committee suggested that the National Soybean Processors Association modify its trading rules by setting up discounts for excessive red or green color, and by providing for premiums and discounts based on a standard refining loss of 7 percent. The Edible Oil committee made similar recommendations as to premiums and discounts but asked that they be based on a refining loss of 6 percent instead of 7.

These changes, the soybean group pointed out, should become effective with the marketing of the 1943 crop, or sooner if the Commodity Credit Corporation should be in position to make compensatory changes in the 1942 refiner contracts. It recommended, too, that they be incorporated in the OPA price schedules, effective with modification of the association trading rules.

Oil Committee

FDA purchase specifications were discussed by both committees.

Members of the Edible Oil Refining Industry Food Advisory Committee are: John H. Bryson, Dothan Oil Mill Company, Dothan, Ala.; W. S. Dorset, Interstate Cotton Oil Refining Co., Sherman, Tex.; Guy G. Fox, Armour & Company, Chicago, Ill.; Henry W. Galley, A. E. Staley Mfg. Company, Decatur, Ill.; Frank A. Himschoot, Corn Products Sales Company, New York, N. Y.; William E. Miller, Capital City Products Company, Columbus, O.; James G. Parry, Procter & Gamble Distributing Company, Cincinnati, O.; A. Q. Petersen, Wesson Oil & Snowdrift Co., Inc., New Orleans, La.; George J. Stewart, Swift & Company, Chicago, Ill.; J. F. Wilson, Jr., Lever Brothers Company, Cambridge, Mass.; R. W. Levenhagen, Glidden Company, Cleveland, O.

Processor Group

Members of the Soybean Processors Industry Food Advisory Committee are: D. J. Bunnell, Central Soya Company, Chicago, Ill.; H. E. Carpenter, Berea Milling Company, Berea, O.; J. B. De Haven, Allied Mills, Inc., Chicago, Ill.; Roger Drackett, Drackett Products Company, Cincinnati, O.; Philip S. Duff, Archer-Daniels-Midland Company, Minneapolis, Minn.; E. D. Funk, Jr., Funk Bros. Seed Company, Bloomington, Ill.; Porter Jarvis, Swift & Company, Chicago, Ill.; E. F. Johnson, Ralston-Purina Company, St. Louis, Mo.; Howard Kellogg, Jr., Spencer Kellogg & Sons, Buffalo, N. Y.; S. D. Ormsby, Oswego Products Company, Oswego, N. Y.; E. K. Scheiter, A. E. Staley Mfg. Company, Decatur, Ill.; H. R. Schultz, Standard Soy Bean Mills, Centerville, Ia.; Charles J. Simmons, Plymouth Processing Mills, Fort Dodge, Ia.; P. E. Sprague, The Glidden Company, Cleveland, O.

BE DARNED SURE

That no American or Allied soldier is ever killed or injured because you failed to provide him with the sinews of war by taking your full part in production.

FIRST-AID *to Your* SOYBEANS

No experienced Soybean grower would think of planting this year without inoculating his seed. Agricultural authorities universally recommend inoculation. And common sense demands it. The cost is so slight that you simply can't afford to take chances. Our country needs all the Soybeans it can grow and inoculation will make certain that the crop is aided by sufficient quantities of bacteria to supply its nitrogen needs. Order LEGUME-AID today.

LEGUME-AID

Soybean growers who rely on LEGUME-AID enjoy many advantages. First there is the certainty that they will receive a correctly selected strain of bacteria, produced under the most rigid laboratory controls. Second is the assurance that these bacteria will reach them in active vigorous condition, protected by the moisture resisting inner bag of the unique carton package. Next comes the simplicity of handling and the ease with which this package may be opened and used. And finally there is the economy due to units of convenient size that do away with any necessity for wasteful buying. There is no shortage in the supply of LEGUME-AID. Your dealer can secure it provided you order in time.

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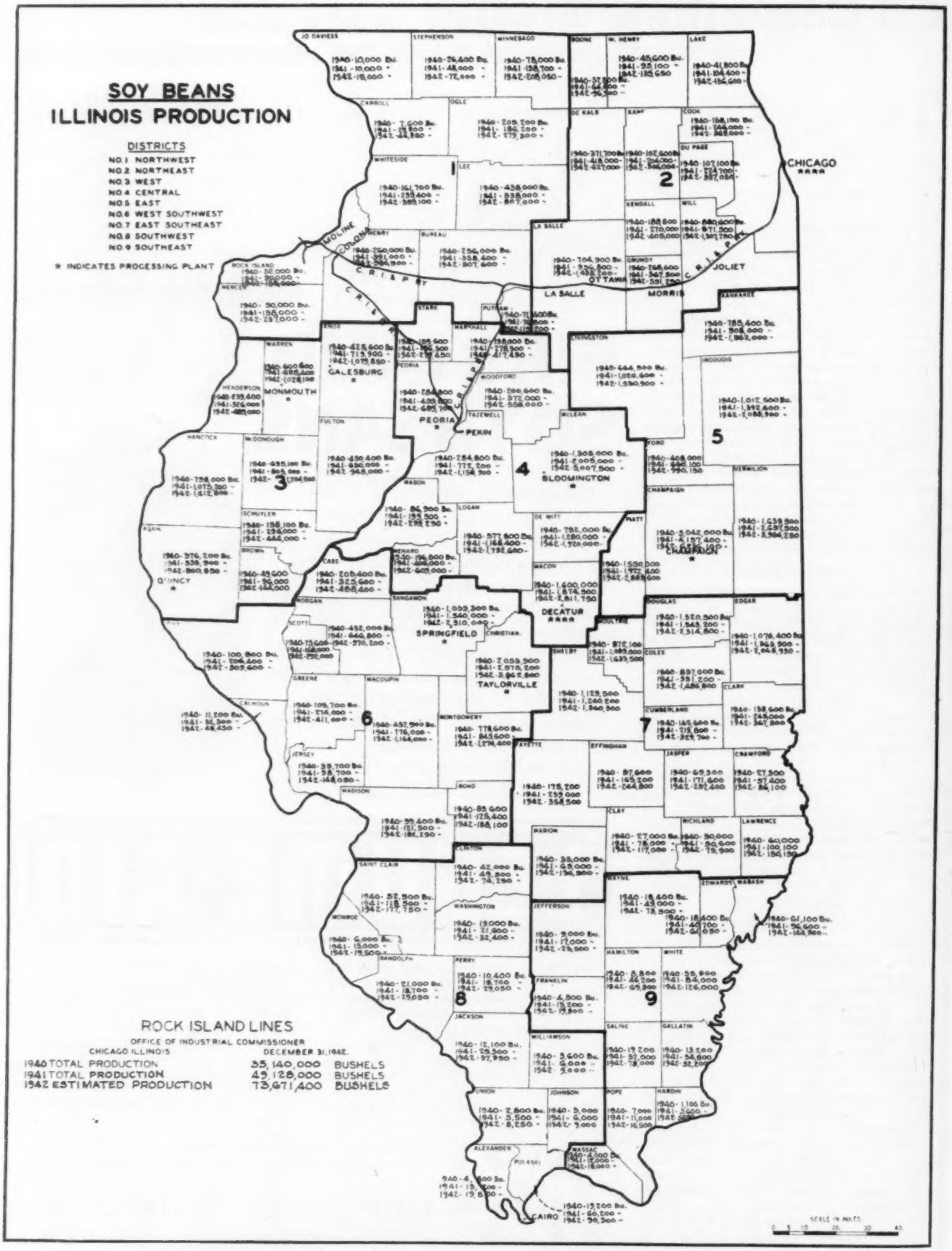
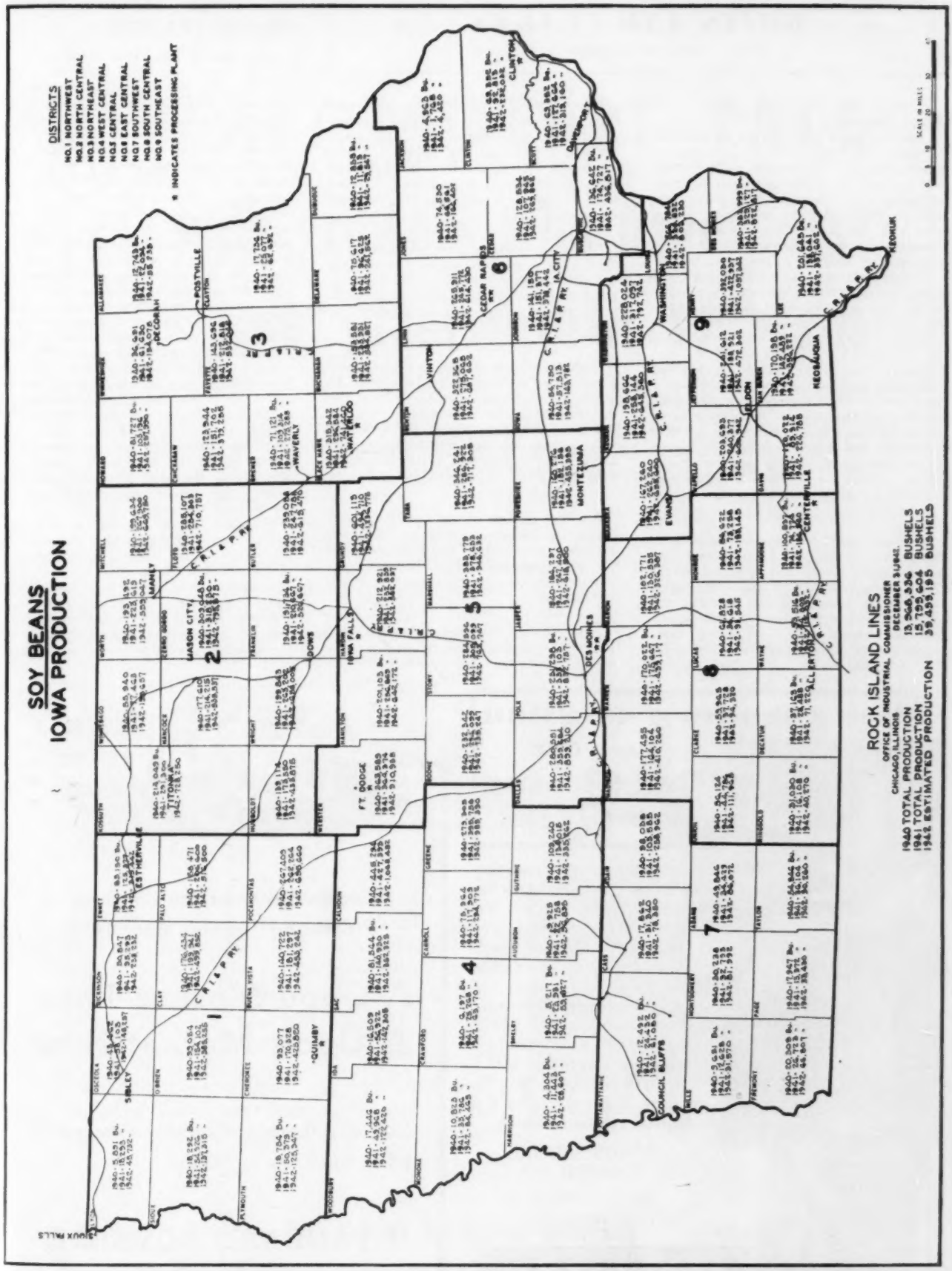
The INOCULANT in the CARTON



SOYBEAN MAPS on this and following page are made available to readers of THE SOYBEAN DIGEST by the Rock Island Lines. Illinois, the leading soybean state, increased acreage from 388 thousand in 1932 to 3.5 million acres in 1942. In 1942 the state produced one-third of the nation's soybean crop. Location of processing plants is starred.


SOY BEANS
IOWA PRODUCTION
DISTRICTS
NO.1 NORTHWEST
NO.2 NORTH CENTRAL
NO.3 NORTHEAST
NO.4 WEST CENTRAL
NO.5 CENTRAL
NO.6 EAST CENTRAL
NO.7 SOUTHWEST
NO.8 SOUTH CENTRAL
NO.9 SOUTHEAST
* INDICATES PROCESSING PLANT
ROCK ISLAND LINES
OFFICE OF INDUSTRIAL COMMISSIONER
CHICAGO, ILLINOIS
DECEMBER 31, 1942.
1940 TOTAL PRODUCTION 13,968,336 BUSHELS
1941 TOTAL PRODUCTION 15,799,604 BUSHELS
1942 ESTIMATED PRODUCTION 39,499,195 BUSHELS
SCALE IN MILES
SIOUX CITY
SHELDON
SIBLEY
ESTHERVILLE
SPENCER
ALGONA
FORT DODGE
IOWA FALLS
MASON CITY
CLEAR LAKE
MANLY
TITONKA
WATERLOO
WAVERLY
CEDAR FALLS
INDEPENDENCE
POSTVILLE
DECORAH
CLINTON
DUBUQUE
CASCADE
DYERSVILLE
MONTEZUMA
GRINNELL
DES MOINES
NEWTON
OSKALOOSA
KNOXVILLE
CENTERVILLE
CRESTON
ATLANTIC
CORNING
CLARINDA
SHENANDAH
RED OAK
CLARINDA
COUNCIL BLUFFS
CRAIG
EVANS
WASHINGTON
MT. PLEASANT
FAIRFIELD
OTTUMWA
ALBIA
CHARITON
CORYDON
CHARITON
NEW LONDON
MT. AYR
CRESTON
OSCEOLA
CLARKE
LUCAS
WAYNE
DECATUR
RINGGOLD
TAYLOR
PAGE
FREMONT
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
WAYNE
APPANOOSE
DAVIS
WAPELLO
JEFFERSON
HENRY
LEE
VAN BUREN
DES MOINES
LOUISA
MUSCATINE
JOHNSON
JONES
CLINTON
JACKSON
DUBUQUE
DELAWARE
BUCHANAN
BLACK HAWK
GRUNDY
HARDIN
MARSHALL
TAMA
BENTON
LINN
JONES
CEDAR
SCOTT
CLINTON
JACKSON
DUBUQUE
DELAWARE
BUCHANAN
BLACK HAWK
BREMER
FAYETTE
CLAYTON
WINNESHIEK
ALLAMAKEE
CHICKASAW
FLOYD
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
WORTH

★ GRITS AND FLAKES ★

FROM THE INDUSTRY

Henry P. Carruth, Vice-President of the Brown Company in Berlin, N. H., will shortly join the Union Bag & Paper Corporation as Executive Vice-President, according to announcement. Mr. Carruth studied chemical engineering at Massachusetts Institute of Technology. He entered the paper business in 1906. In 1936 he became associated with the Brown Company as General Manager for the Trustees. He served in this capacity until its reorganization in 1941 and then became Vice-President and Chief Executive Officer. Mr. Carruth is a member of the Industry Advisory Committee of the War Production Board.

Two of the Edgewater, N. J., soybean processing mills of the Archer-Daniels-Midland Linseed Oil Co., have been shut down because of inability to get shipments of beans. This company converted to soybeans processing last December by special request of the government, and the company reports it has appealed repeatedly to all federal agencies for shipments.

A Watonwan County Soybean Association has been organized by the Commercial Club of St. James, Minn. The objectives of the Association as stated in the organization meeting are to keep soybean seed at home, acting as a clearing house; to provide educational material as to varieties best suited to the county; and to install an expeller for processing the beans.

Illinois feed dealers, elevator men, county farm advisers, Smith-Hughes teachers, representatives of the Farm Security Administration and members of county U.S.D.A. war boards got together for a series of April meetings where the protein feed situation with its threat to the war program was discussed.

Failure to increase the salt content of chick rations when changing from animal proteins to vegetable proteins may be a contributing cause of cannibalism, suggests L. B. Corman in Archer-Daniels-Midland Company nutrition news letter.

Soybeans will be planted on the new state park created at Storm Lake, Iowa, with silt pumped from Storm Lake, G. L. Ziemer of the state conservation commission has announced. It is necessary to start plantings with a crop that will withstand the wind and soil conditions and soybeans are the answer.

A rabbit recently got into the Ohio State University greenhouse, and before it was discovered the "bunny" had eaten the leaves off 4,000 soybean plants. Thus ended a test on which university scientists had been hard at work.

Acute protein concentrate shortage situation in Texas has been relieved to some extent, reports the Texas crop bulletin.

AN IOWA BEAN DEMONSTRATION

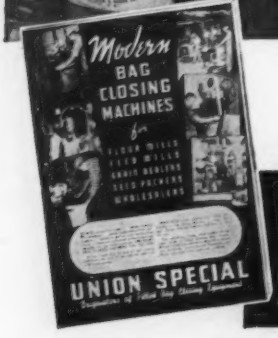
Arrangements have been completed by Earl A. Langfitt and O. N. Lafollette, state feed inspector, with the full cooperation of the Farm Crops Department of Iowa State College, and L. J. Nickle, County Extension Director of Warren County, for a soybean demonstration plot on the Earl A. Langfitt Seed Farm, Indianola, Iowa, for the coming season. All of the recommended varieties of soybeans of the geographical area will be planted in this plat. This will include the introduction of the newest varieties available, as well as standard varieties already in production. It is the aim of those in charge of this project to answer through actual demonstration some of the many questions pertaining to soybean production, such as row planting against drill or broadcast planting, the value of inoculation, contour planting and cultivation methods.

Mr. Langfitt, a former student at Iowa State College, and for a time in the extension work of that institution, is thoroughly qualified to conduct this demonstration in a practical way. Mr. LaFollette states that his primary interest in this demonstration is that of giving the farmers an opportunity of studying the various varieties and the practical production methods that apply to the soybean industry.

The seed for the planting of this plot will be furnished through the courtesy and cooperation of the Farm Crops Department of Iowa State College.

A soybean field day will be held at the Langfitt Seed Farm this fall at which time representatives of the Farm Crops Department of Iowa State College and leaders of the soybean industry will be present to conduct a typical educational program.

Get a modern solution for your Bag Closing Problems



AS the pioneer manufacturer of bag closing machines, Union Special Machine Company over a long period of years has assembled a store of information and a line of standard and special machines that make solution of most BAG CLOSING PROBLEMS merely a question of knowing YOUR REQUIREMENTS. Ask for a copy of the interesting new bulletin pictured at left.

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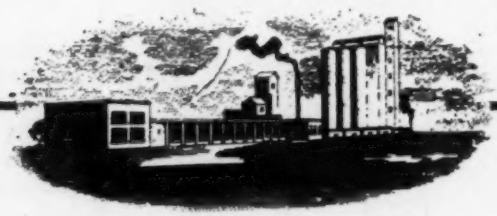
UNION SPECIAL



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A Good Market Then
A Good Market Now

Call us when you have Soybeans to offer, trucklots or carlots.

STANDARD SOYBEAN MILLS

Centerville, Iowa

A HEART-TO-HEART TALK

.... with growers who have not planted their soybeans

You can still give Hitler a stiff poke in the snoot . . . and do yourself a mighty good turn . . . just by inoculating your beans before planting. Sounds simple . . . but it's gosh-awful important. If you've arranged to inoculate, O. K. But if not . . . STOP AND THINK.

It's a 10 to 1 bet inoculation with Nod-O-Gen will "up" your yields. Leading growers have harvested from 1 to 15 bushels more per acre just by inoculation. Agricultural authorities and government officials are unanimous in urging inoculation this year. Bigger soybean crops mean more food for service men and civilians, more feed for livestock, more soybean oil for war manufacturing.

Now that you're short of help and crowded for time . . . you can't afford NOT to inoculate . . . because inoculation is a simple job, quickly done and costs only a few cents an acre. Few, if any, farm operations yield a bigger profit.

And when it comes to picking out your inoculator, please think of Nod-O-Gen. Here's an inoculator with a great record of performance in the field since 1914 . . . a record of boosting yields, increasing the protein content of feed and enriching the soil.

Time is very short. If you have not arranged for your inoculator, call your dealer now. Delay may be costly to you.

NOD-O-GEN made the difference. The larger bundle was inoculated with NOD-O-GEN; the smaller one was not.

Farm Laboratory Division THE ALBERT DICKINSON COMPANY Chicago, Est. 1854

NOD-O-GEN The Pre-Tested Inoculator
The Crop and Profit "Pepper Upper"

★ *SOYBEANS . . . . and People* ★

ROASTED SOYBEANS

SALTED roasted soybeans find wide favor in these days of protein shortages. They can be munched like peanuts and are somewhat similar in flavor, or they can be used in a variety of recipes. Roasted soybeans are now available generally in retail stores under various trade names. They can also be prepared readily at home.

They should be soaked in water, preferably salted, until they have reached their maximum size, which will ordinarily be from 20 to 24 hours, depending on the moisture content at the start.

Frying in deep fat is preferable, although they can be roasted dry. The deep fat method gives a much better flavored product. They should be fried a few at a time in deep fat at 350 degrees F. for 8 or 10 minutes.

When the beans are removed from the deep fat they should be placed on paper toweling or on a drain screen, to allow the hot oil to drip off. As the beans cool their capacity to hold oil increases, and they therefore dry. When they reach a cool stage they will be practically free of surface oil. Salting will have to be done while the beans are still hot in order to get the salt to stick.

Following are recipes using roasted soybeans:

Soy Omelette

To two beaten eggs, add ½ cup milk and two tablespoons chopped or ground soys. Salt to taste and cook the usual way. Cheese may be added to make a cheese soy omelette.

Soy Gelatin

Make gelatin with your favorite flavor and pour into individual molds. After molds become cool and partly jelled, add teaspoonful of diced fruits and top with soys, either whole or chopped. Let set until ready to serve. Whipped cream may be added just before serving if desired.

Soy Salads

Over your favorite fruit or vegetable salad, sprinkle a tablespoon of soys, preferably cracked or ground, just before serving.

Soy Nut Meat Loaf

To two pounds of ground beef, shred three medium carrots, one-third cup finely chopped celery, one finely chopped green pepper, two cups of ground soys, two well beaten eggs. Work thoroughly and if dry add enough water to make moist. Grease baking dish and mould into a loaf. Bake in moderate oven for one hour. Slice and serve.

Boiled or Baked Soys

One pound roasted soys — ½ pound bacon cut into small pieces — one good teaspoon brown sugar, ¼ cup good catsup. Boil rapidly 2½ to three hours. Add water as needed to keep from burning. After 2½ hours, allow to simmer until most of the water is cooked out. Serve hot. Follow same formula for baking.

Cereal

Serve cracked soys with cream and sugar as you would grape nuts.

Soup

Use in same manner as crackers or croutons in any kind of soups.

Soy Butter

To one pound roasted soys add five ounces any good vegetable oil, mix well, and grind as fine as possible. This makes a spread similar to peanut butter. This formula is good for small amounts to be used up in a short time. A little salt may be added if necessary.

Soy Sundaes

Use cracked or ground soys on any dish of ice cream in same manner as chopped nuts. Truly delicious.

The

"PAPER WORK" COMES FIRST

Based on the Washington outlook, bins for soybeans and other farm "criticals" soon will command a preferential rating. In no other way can the farmer pull his full weight in the war effort.

Lay your plans accordingly. If you need bins, get the paper work behind you now . . . be ready to release the contract the day the break comes.

Stave or Monolithic
1943 Catalog ready

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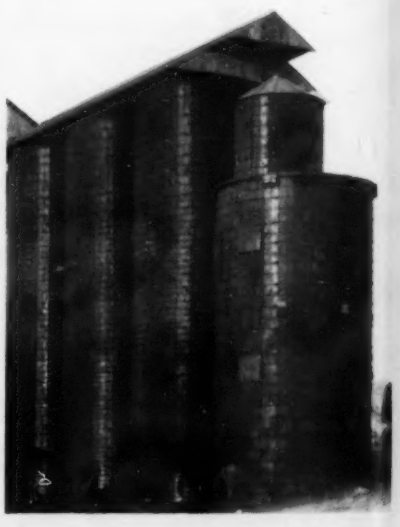

INOCULATE YOUR Soy Beans

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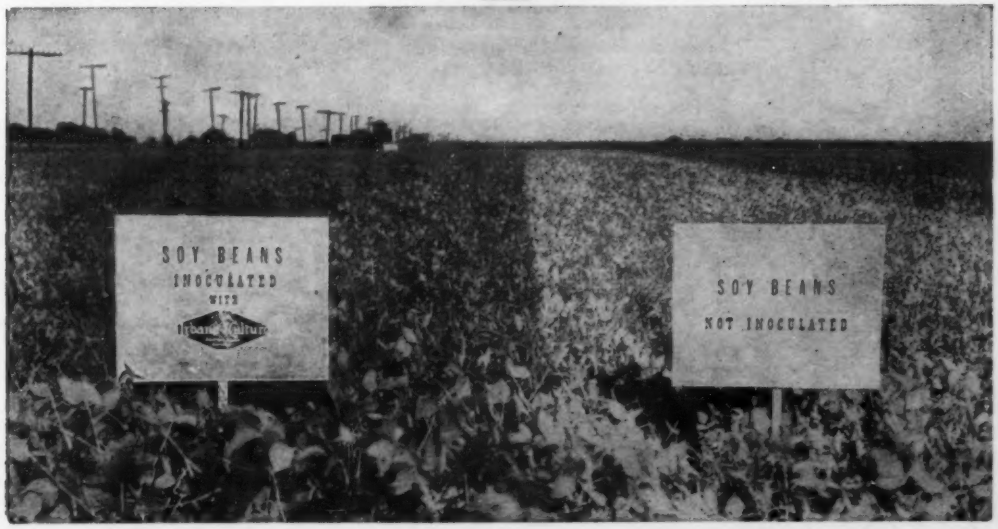
SOY BEANS for VICTORY



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and
If You Are a Soybean Grower

Then you should be feeding Purina Chows. These feeds are supplements to your grain and they are made to do a more profitable job of producing pork, eggs, or milk than straight grain will do. And they use soybean meal as a major source of protein. In fact, Purina Mills is the largest user of soybean oilmeal in the country. Use the feeds that utilize the beans you grow! . . . . . **Purina Mills, St. Louis, Mo.**

USE OF SOYS IN ALLERGY DIETS

(Continued from page 5)

consists of mixing the various ingredients (soybean flour, soybean oil, sugars, and salts) in water in great steam jacketed vats. From these it flows into a homogenizer where under a pressure of 2500 pounds the particles are disintegrated and the oil finely dispersed, the mixture emerging as a creamy white emulsion.

The *Mull-Soy* is then filled into sanitary-type tin cans, sealed, and sterilized under steam pressure. After drying and cooling, the cans are labeled and packed, ready for shipment. Every step of the process is carefully controlled. Automatic recording devices maintain the proper temperatures in mixing vats and sterilizing retorts, while the time of each operation is held within narrow limits. Raw materials are all laboratory tested to meet rigid standards of quality and uniformity, and samples of the finished product are sent to the control laboratory at every step in manufacture. It is only by means of such constant vigil that the objectives of milk-like nutritive value, stability of the emulsion, and keeping qualities can be uniformly assured.

Since almost the entire output is used for allergic cases, the promotion is done entirely on an ethical basis through the medical profession. *Mull-Soy* bears the seal of acceptance of the Council on Foods and Nutrition of the American Medical Association, and frequent references in medical text books and journals show the physicians' interest in this soybean product. In the early days, promotion was accomplished almost entirely by personal efforts of the inventor, but now a large staff of men call on all the leading physicians throughout the country and *Mull-Soy* is exhibited at the meetings of nearly all the medical societies. Inventory stocks are maintained in warehouses in several key cities in various parts of the country from where it is distributed to the larger drug wholesalers. These in turn distribute to the local retail drug stores who are the source of supply for the ultimate consumer.

—s b d—

We are buying YELLOW SOYBEANS

We are in the market for yellow soybeans in truck or carload lots. Get in touch with our buyers at the following soybean plant locations.

BUFFALO, N. Y.
98 DELAWARE AVENUE
Phone Cleveland 5850

CHICAGO, ILL.
3526 BANKERS BUILDING
Phone Franklin 3437

DECATUR, ILL.
Phone 5365

DES MOINES, IOWA
EAST 3RD AND MARKET STS.
Phone 4-7291

SPENCER KELLOGG AND SONS, INC.
Administration Office: Buffalo, N. Y.

THE SOYBEAN HAS GROWING PAINS

(Continued from page 7)

duced, which is not only 68 per cent more than the production of cottonseed meal but equal to the tonnage of cottonseed meal, linseed oilmeal and peanut meal combined.

The quantity of soybean oil to be produced in 1942-43 has been estimated at 1,260 million pounds compared with 1,445 million pounds of cottonseed oil, 730 million pounds of linseed oil, and 200 million pounds of peanut oil. Soybean oil production exceeds the production of linseed oil and peanut oil combined, but because of the larger amount of cottonseed oil recovered per ton of seed, the production of cottonseed oil still is ahead of soybean oil by a small margin which may be overcome during the year ahead.

The Farm Chemurgic Council can take a greater part in the further expansion of the soybean by encouraging the proper harvest of the beans to avoid green oil due to premature cutting or red oil due to winter damage in the field; encouraging the greater use of yellow varieties of beans which give a larger yield of superior colored oil; encouraging safe storage of beans to prevent heat damage due to storage of beans which are too high in moisture; encouraging the saving of oils essential to the war effort by the use of the cencentrate instead of whole beans for farm feeding; encouraging the expansion of soybean cultivation in those areas where there is a reasonable expectancy in terms of pounds of oilmeal and oil per acre and by recognizing that in other areas the growing of peanuts, flax or cotton may be a more profitable venture.

Seed Trade News

Bible of the Seed Industry

Of vital interest to growers, wholesale and retail dealers. Only weekly newspaper for the industry. **Up-to-minute production, merchandising and trade news.** Subscription — $2.00 per year. Sample copy on request. Service — free and friendly.

109 No. Dearborn St., Chicago, Ill.

SHUEY & COMPANY

Chemists

Savannah, Ga.

Analysis of

SOYBEANS AND PRODUCTS

Official Chemists for National Soybean Processors Association

ELEVATOR MEN!

We have a few sets of soybean grading sets which we are closing out. While they last we are offering them with a year's subscription to THE SOYBEAN DIGEST at a low combination price. Processors are more careful of grades than ever before. Don't get caught flatfooted. Be prepared with a

New Sieve Set

Take Advantage of This Offer . . .

- **1 8/64" ROUND HOLE SIEVE**
- **1 10/64"x¾" SLOTTED SIEVE**
- **1 CATCH PAN**
- **1 YEAR SUBSCRIPTION TO —**

THE DIGEST

all for $6.75

(Regular Value, $8.25)

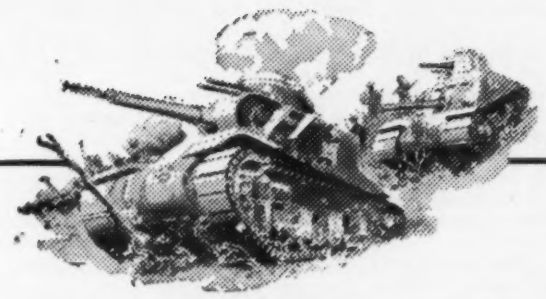
Sieves meet the new Federal grading specifications

Mail your order today to

THE

Soybean Digest

Hudson, Iowa



AFRICA CALLING all HENYARDS

DEHYDRATED eggs laid by your hens may be nourishing our lads in burning Africa, or our Marines in steaming tropical jungles. They may be giving strength to soldiers on the death swept plains of Russia, or the warriors of Chiang, or girl ambulance drivers in Britain.

Calls for your eggs will be numberless in 1943. That is why Uncle Sam has asked you to increase production, us to keep our wheels forever turning to supply poultry raisers with the maximum quantity of **HOOSIER PRODUCTS**.

HOOSIER SOYBEAN MILLS, Inc.

Marion, Ind.

Sole Manufacturers
Patented

NU-SĒME
BURLAP AND COTTON BAGS

The best substitute for new bags.

Also good quality second-hand bags.

ALWAYS
a good source of supply for bags.

During the war and After the war

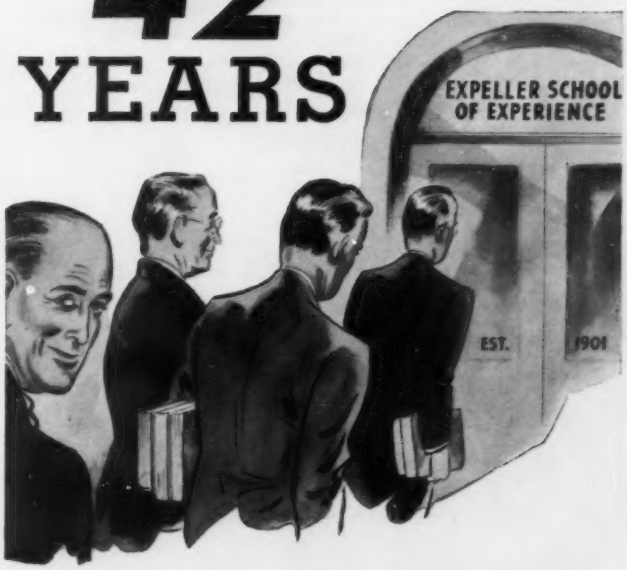
QUALITY AND SERVICE

WESTERN BURLAP BAG CO., Inc.

1109-21 West 38th St. **CHICAGO, ILL.**

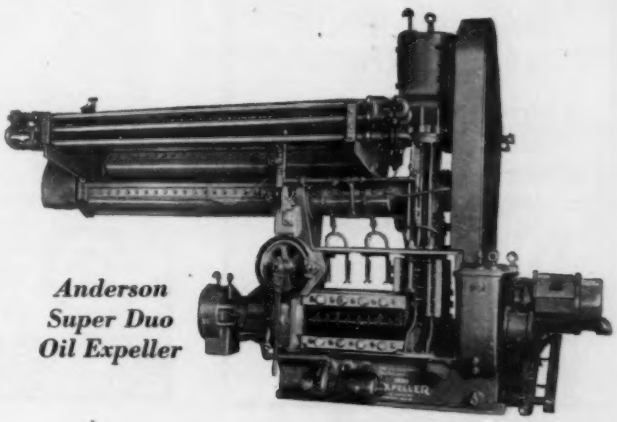
We've been going to school for

42 YEARS



THE PROCESS of education is never over for Expeller Engineers. Since the first No. 1 Expeller was built in 1901, our plant and field engineers have been studying Expellers and their uses. They have supervised hundreds of installations—have watched Expellers in all types of uses—and have helped formulate new processes and methods for oil mills and rendering plants. This practical education has resulted in constant Expeller improvements. It is why Anderson Expellers today are the most economical and profitable of all types of pressing equipment. Our 42 years of practical Expeller experience is available to you. If you are considering building a new plant, expanding your facilities, or replacing old equipment now or after the war, it will be worth your while to consult with an Expeller Engineer. Now is an excellent time to plan post-war Expeller installations.

THE V. D. ANDERSON COMPANY
1958 WEST 96th STREET • CLEVELAND, OHIO



Anderson Super Duo Oil Expeller

START STUDY OF SOYBEAN DISEASES

(Continued from page 4)

tion on control measures is available at this time, there is some useful information that can be given:

When soybeans are first grown upon a soil in which the nodule bacteria are not yet established and the seed is inoculated, soybeans can be grown continuously with increasing success each year for about three years, other things being equal. This is the result of the fact that the nodule bacteria become increasingly better established each year. After about the third year, yields may be steady for awhile. If the soil is "sweet," repeated seed inoculation after about three inoculated crops is not always necessary.

From the sanitation standpoint, continuous cropping to soybeans is certainly not advisable. This fact was strongly emphasized during the falls of the past two seasons when the soybean stems and pods were loaded with the fruiting bodies of pathogens, especially Diaporthe and Glomerella. While seed infection is no doubt of considerable importance in some cases, the indications are that by far the largest source of infectious inoculum is in the soil and crop refuse.

There are two other important reasons why crop rotation should be practiced with soybeans. With increasing acreages of soybeans there has been increasing damage from the grape colaspis, but only in the second or third consecutive year. When soybeans do not follow soybeans or clover, there is no trouble to soybeans from this insect.

The other point is that corn grows unusually well after soybeans. This has been a common experience by agronomists and may be accounted for in part by the results reported by Richardson (Canad. Jour. Res. C., 20:241-256, 1942), that root rot of corn is greatly reduced when corn is preceded by a crop of soybeans. Corn and soybeans are the big war crops in the corn belt, and it is better that these crops be grown alternately instead of either one's being grown continuously.

Results from preliminary greenhouse experiments with soybean seed treatments conducted in the cooperating states were of considerable value in planning field tests for yield to be carried on during the summer. They indicate that when germination is poor — 60 to 80 per cent — as a result of high moisture at ripening time or poor storage conditions, emergence can be increased 10 to 20 per cent by treating the seed with such disinfectants as Ceresan, Spergon or Arasan. When the germination has been poor as a result of frost damage, emergency has been increased 5 to 10 per cent. When soil is "sweet" and already well supplied with nodule bacteria, seed inoculation often is not practiced; and under these conditions seed treatment could not be expected to hinder nodulation. There is some good evidence also that inoculation can be used in conjunction with some of these disinfectants with satisfactory results.

—s b d—

MORE EDIBLES TO BE CANNED

Green vegetable soybeans will be canned by commercial canners this year in larger quantities than ever before, according to information from the canners. Many firms have been increasing acreage just as fast as the necessary seed has become available, and some are doubling acreage this year.

Because of the high protein content of the edible soys, WPB through order M-81 is providing unlimited quantities of cans for them so that any canners who have the beans should get all the containers they can use. However, certain percentages must be set aside for the army if called for as is the case with many other fruits and vegetables.

Whether the larger supply will keep pace with increasing demand, however, is problematical. At least one firm had sold all its 1942 pack before planting time.

There is some confusion over the question whether the canned green beans come under the point system with ration boards at variance. Apparently there has been no definite ruling from OPA, so some dealers are requiring points, others not.

A good crop of soybeans will grow on good land without proper inoculation —but it grows at an extra cost of at least $10 per acre in nitrogen **taken from the land.**

Neither prior crops nor the presence of nodules guarantee the proper inoculation necessary to take this nitrogen "Free From the Air."

Always Use

KALO

INOCULATION

"THE PEER OF THE BEST"

Guarantee proper inoculation at a cost of only pennies per acre

TOP RANKING QUALITY AT NEW LOW PRICES

2 bushel size	$ .30
5 bushel size	.45
25 bushel size	1.95
30 bu. size (6-5 bu. cans)	2.60

KALO INOCULANT COMPANY

QUINCY, ILLINOIS

One Way to Conserve

SOYBEAN PRODUCTS

27 Conveniently Located Offices and Factories

BUFFALO
TOLEDO
PHILADELPHIA
CHAGRIN FALLS
GOSHEN, IND.
MILWAUKEE
MINNEAPOLIS
KANSAS CITY
NEW ORLEANS
JACKSONVILLE, FLA.
DALLAS
ST. LOUIS
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DETROIT
CLEVELAND
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PITTSBURGH
OKLAHOMA CITY
SALT LAKE CITY
BOISE
MEMPHIS
HUTCHINSON
REIDSVILLE, N. C.
HARLINGEN, TEXAS

Today, when conservation of vital soybean products is a matter of national concern, you owe it to your fellow countrymen to safeguard your shipments in every way possible.

Take no chances with bags of mediocre quality. Chase commends to you its sturdy Chase Test cotton fabric—a heavy-duty, tight-weave material made to take a lot of buffeting around.

Bags of Chase Test are made in all standard sizes—perfectly printed as you wish. Send for samples.

CHASE BAG CO.

SERVICE COAST to COAST

GENERAL SALES OFFICES
309 WEST JACKSON BLVD., CHICAGO, ILL.

IN THE MARKETS

STEP UP SOYA PURCHASES

The rapid increase in production of edible soya products for war needs since the Government launched its expansion program last December is reflected in the March report of purchases for Lend-Lease, Territorial Emergency, Red Cross and other purposes, the War Food Administration reports.

Soya flour purchased by the Food Distribution Administration reached a peak of 37 million pounds in March, and purchase of soya grits totaled 41 million pounds. These quantities represent more than one-third of all the purchases of soya flour and grits made since food shipments to our Allies began two years ago.

While a large part of the increased production of soya products is needed for direct war requirements, the expansion program is expected to make available for civilians this year a quantity many times greater than in 1942.

• SOYBEANS IN LEND-LEASE

Purchased by Agricultural Marketing Administration for lend-lease.

Commodity	February	Jan. 1, to Feb. 28, '43	Cumulative
Oleomargarine	—	682,780	33,644,839
Salad Oils, Edible	40,250,560	62,287,680	149,884,781
Shortening	4,264,960	7,887,040	11,813,655
Soya Products			
Soy Beans	7,407,680	14,418,880	49,542,080
Soya Flour and Grits	8,276,800	14,707,840	50,848,000
Soya Sauce	—	—	7,554
	15,684,480	29,126,720	100,397,634

	March	Jan. 1, to March 31, '43	Cumulative
Oleomargarine	1,411,000	4,572,000	101,701,337
Shortening	30,545,120	41,795,136	86,755,914
Soyabean Oil	6,000,000	10,740,000	29,145,362
Soya Products			
Soya Beans	—	—	50,980,000
Soya Flour	37,360,000	68,160,000	97,695,000
Soya Grits	40,800,000	40,800,000	101,090,000
Soya Sauce (cases)	—	—	312

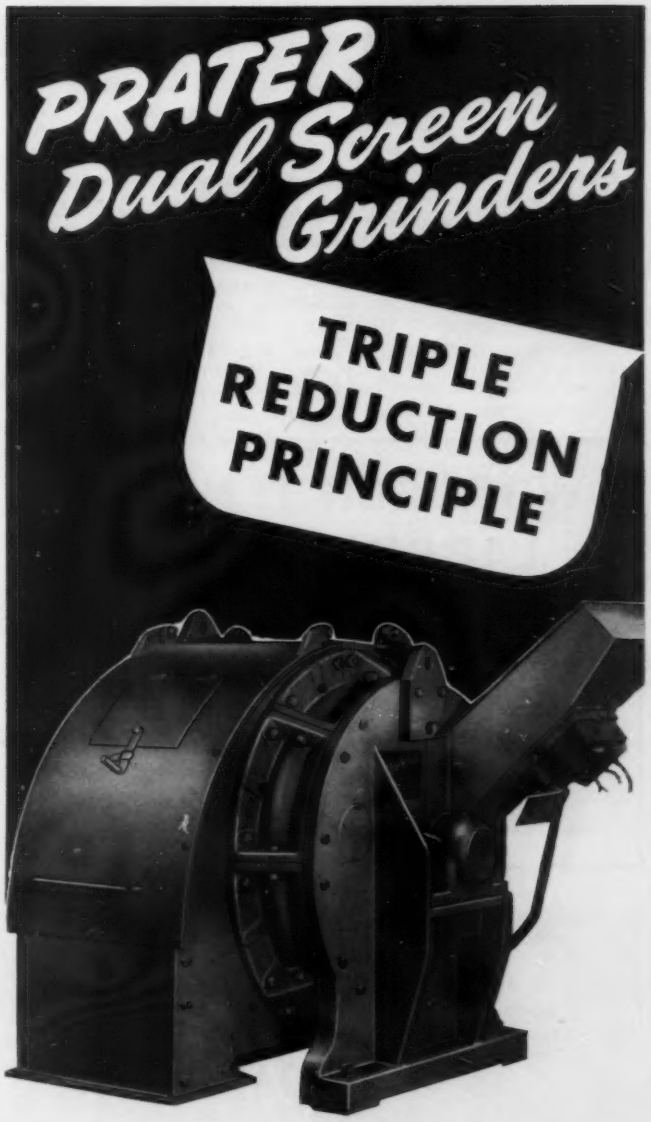
• SOYBEAN INSPECTIONS. More than two-thirds of the soybeans inspected under Federal supervision during March graded Sample, the Department of Agriculture reports.

Of the 7,751 cars inspected, 5,245 or 68 percent graded Sample, 599 cars or 8 percent No. 4, 799 cars or 10 percent No. 3, and 1,108 or 14 percent No. 2 or better.

For the 6 months, October through March, 36 percent of soybeans inspected graded Sample while 33 percent graded No. 2 or better. During the same months last season the bulk of the inspections fell into grades Nos. 3 and 4 with only 4 percent in Sample grade and 33 percent No. 2 or better.

Inspections of soybeans in March included the equivalent of 156 cars inspected as cargo lots, and truck receipts equivalent to about 25 cars.

Period 1942-43	Total Car Lots — Illinois	Indiana	Iowa	Missouri	Ohio
Oct. 1-15	3,752	702	370	75	536
Oct. 16-31	6,118	718	1,117	117	1,893
Nov. 1-15	1,554	229	596	112	716
Nov. 16-30	1,866	245	289	158	406
Dec. 1-15	1,060	331	188	319	386
Dec. 16-31	813	431	267	674	604
Jan. 1-15	684	362	202	274	381
Jan. 16-31	484	294	177	438	320
Feb. 1-15	1,132	168	219	593	218
Feb. 16-28	994	141	227	367	201
Mar. 1-15	2,138	182	486	429	245
Mar. 16-31	1,505	149	421	525	190
Apr. 1-15	1,685	189	296	446	126
Apr. 16-30	1,541	214	220	40	260
Total	25,326	4,355	5,075	4,567	6,482



AT THE START of the processing of soyas, the Prater Dual Screen Grinder is almost universally specified for grinding of the beans. FROM THE START of the soy bean industry, Prater Grinding Service has constantly added to its store of engineering knowledge that brought this position of leadership.

PRATER PULVERIZER COMPANY,
1825 S. 55th Ave., Chicago, Ill.

Please send me information on Dual Screen Grinders covering the Soybean industry.

Name.....

Address.....

City..... State.....

Mail Today
Prater
PULVERIZER
CO.
1825 S. 55th Ave.
CHICAGO · ILLINOIS

● **STANDARD SHORTENING SHIPMENTS**

By Members of Institute of Shortening Mfgs., Inc.

Week ending April 10, lbs.	14,707,494
Week ending April 17	11,200,349
Week ending April 24	10,600,317

● **PROSPECTIVE MEAL PRODUCTION.** Based on prospective acreages of oilseeds, 1943-44 production of high protein vegetable oil cake and meal is expected to be larger than for the current season, but since large quantities of soybean meal will be used for human food, prospects are for a slightly smaller supply for livestock. Expected supply available in 1943-44 for livestock feeding, in tons, is as follows: linseed meal 825,000; soybean meal 3,425,000; peanut meal 200,000; cottonseed meal 1,750,000; total 6,200,000. Consumption by livestock from crushings of the 1942 crop and carryover, is expected to reach a total of 6,385,000 tons by end of current crop year, of which 850,000 tons is linseed meal, 3,300,000 tons soybean meal, 135,000 tons peanut meal, and 2,100,000 tons cottonseed meal.

WOODSON-TENENT LABORATORIES

MEMPHIS, TENNESSEE and CAIRO, ILLINOIS

Analysis of Soybeans and Products

Official Chemists for National Soybean Processors Association

HERE'S A $64 QUESTION

Q. Why is ANSUL Sulphur Dioxide Better for Soybean Processing?

The $64 would be practically "in the bag" if you'd give these 100% correct answers:

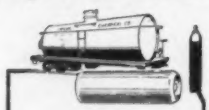
1 Better proteins are obtained when Ansul Sulphur Dioxide is used in extraction and precipitation.

2 Ansul Sulphur Dioxide is a selective solvent for treating soybean oil.

3 Bleaching of proteins with Ansul Sulphur Dioxide or hydrosulfites derived from Ansul Sulphur Dioxide improves their color.

LIQUID Sulphur Dioxide BY ANSUL

AT YOUR SERVICE: The Ansul Technical Staff will be glad to help you work out problems of application and handling of Sulphur Dioxide. Write today!



Supplied in tank cars, ton drums and 150-lb. cylinders.

28 Years of Knowing How

ANSUL CHEMICAL COMPANY

MARINETTE, WISCONSIN • EASTERN OFFICE: PAOLI, PENN.

● **SOYBEAN STOCKS:** Farm stocks of soybeans on April 1, 1943, were estimated at 57,610,000 bushels — 27.5 percent of the 1942 production of 209,559,000 bushels. Although comparable estimates for the U. S. are not available for previous years, April 1, 1942 farm stocks for the two states (Illinois and Iowa) where surveys were made in past years, amounted to 20,953,000 bushels or 32 percent of their 1941 crop. On April 1, 1943, farm stocks of soybeans for these states amounted to 31,077,000 bushels — about 27 percent of their combined 1942 production. More than half of the U. S. total farm stocks on April 1 were in these two states. Since production in 1942 was the largest on record, there is little doubt that farm stocks exceed any previous stocks on this date.

Of the 57,610,000 bushels remaining on farms April 1, somewhat over 12 million bushels will be needed for seed on farms where grown and possibly 2 million bushels are still to be fed. Thus, between 43 and 44 million bushels that could be expected to move into marketing channels or to be used as seed and feed on other farms, remained on farms April 1, 1943. To plant the prospective acreage for 1943 about 11 million bushels will be needed in addition to the 12 million bushels to be used on farms where grown.

Harvesting of soybeans from acreage seeded in 1942 continued intermittently during the first three months of the year as weather permitted. Prospects are that most of the 1942 acreage intended for harvest for beans will be finally harvested except in Ohio, Michigan, Missouri, Arkansas, and a few states of minor importance. Yields of late harvested beans, however, were running lower than the favorable yields obtained prior to the adverse harvesting weather which began in November. Late harvested beans have been poor in quality and running high in moisture content — factors which have encouraged immediate marketing.

Soybeans for Beans

State	Production 1942 crop	—Stocks on farms April 1, 1943— % of 1942 production	Quantity
	Thous. bu.	Percent	Thous. bu.
Ohio	28,819	24	6,917
Indiana	29,757	30	8,927
Illinois	73,794	24	17,711
Michigan	3,740	25	935
Minnesota	3,549	36	1,278
Iowa	39,312	34	13,366
Missouri	7,500	33	2,475
North Carolina	3,900	32	1,248
Mississippi	2,842	16	455
Arkansas	3,585	9	323
10 Prin. States	196,798	27.3	53,635
Other States	12,761	31.1	3,975
U. S.	209,559	27.5	57,610

Commercial grain stocks reports list stocks of soybeans in commercial storage Apr. 13, 3,172,705 bu.; Apr. 21, 3,196,705 bu.; Apr. 27, 2,950,622 bu.; May 4, 2,743,398 bu.; May 11, 2,740,205 bu.

● **FACTORY CONSUMPTION.** With production of soybean oil at a new high level in 1942, an increase of nearly 40 percent occurred in factory consumption, reports the Bureau of Agricultural Economics. A very marked shift to edible uses took place. Edible products took 83 percent of total factory consumption in 1942, compared with 73 percent in 1941. Drying industries took only 4 percent compared with 11 percent in 1941, and miscellaneous industrial uses only 2 percent compared with 5 percent a year earlier. Use for soap remained at 5 percent of total factory consumption.

GOVERNMENT ORDERS

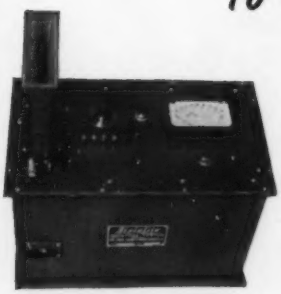
● **OILMEAL INVENTORY.** Extension and modification of limitations upon inventory supplies of oilmeal have been announced by the War Food Administration. The new order (FPO 9.1) will be in effect from May 1 until further notice. It permits processors to acquire a stock of oil seed meals as of the end of any month equal to the quantity held as of the same date in 1942, or a quantity equal to 15 days' crushing capacity, whichever is greater. Food Production Order No. 9, issued February 27, 1943, limited the alternative quantity to 5 days' crushing capacity.

The new order permits livestock feeders to acquire an inventory of 30 days' consumption requirements, instead of 15 days' heretofore. It also permits any person to purchase 2,000 pounds or less of oil seed meal, provided such purchases are needed in quantities and at intervals which are in accordance with purchases regularly made by such person. Heretofore, the quantity was 1,000 pounds.

HERE'S *the* EASY WAY

to know the moisture content

of OIL MEAL



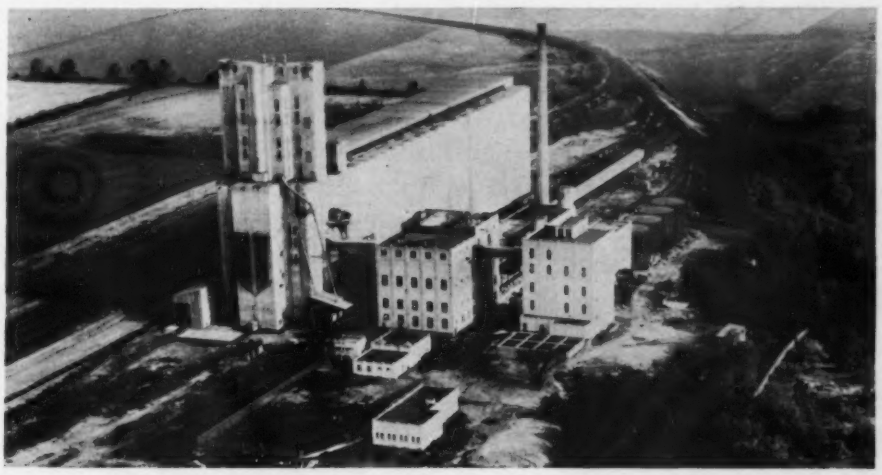
The STEINLITE One-Minute Moisture Tester

Use a Steinlite Moisture Tester . . . the fastest and simplest way we know about to test oil meal and grain. Automatically registers moisture content of sample. Average test time is about one minute. Every machine checked against government standards. Accurate to .2 of 1%. Can accommodate as low as 1% or as high as 35% moisture content. Over 3000 users. Temporarily available on "Free Trial — no deposit — early shipment." Write for Free Trial Plan today.

"HEADQUARTERS" for Moisture Testers • Scales • Sampler Pans . . . everything for Seed and Grain Testing

SEEDBURO EQUIPMENT COMPANY

629 BROOKS BLDG.
CHICAGO, ILL.



A. D. M. Soybean Processing Plant . . Located at Decatur, Illinois.

WHAT IS GOOD-WILL?

Good-Will is the disposition of a satisfied customer to return to the place where he has been well treated.

The Archer and Daniels families have been engaged in the Oil Milling business for a century (1840-1940), and the good-will which has been built up during those hundred years is jealously guarded in every transaction.

ARCHER-DANIELS-MIDLAND COMPANY

MINNEAPOLIS, MINN.

Other Soybean Processing Plants Strategically Located at:

CHICAGO
TOLEDO
MILWAUKEE
MINNEAPOLIS
BUFFALO

The Mark of

ARCHER BRAND

Quality Soybean Products

Too little and too late can't help you in a fight against time when every ounce of energy in your organization is straining for production and more production.

In times like these, you want a source of solvents supply that you can depend on for both the quality and quantity you must have. And when you order SKELLYSOLVE—you get just that. Any quantity within reason . . . quality that's guaranteed . . . and delivery where and when you need it.

Phone, write, or wire and we'll do the rest. Special technical service, too, if you need it.

SKELLYSOLVE

for the Extraction Method in the

SOYBEAN INDUSTRY

The Skellysolve especially refined for the extraction of soybean oil not only gets *more oil* from each bushel of soybeans but, also, the extraction process is more favorable to the retention of nutritional properties of soybean meal. Skellysolve has the correct boiling range, is free from greasy residues, foreign tastes and odors, all of which is essential to the success of the more efficient extraction method.

SKELLYSOLVE

SOLVENTS DIVISION, SKELLY OIL CO.

SKELLY BLDG., KANSAS CITY, MO.